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THE EFFECTS OF THE ACCESSION TO THE EUROPEAN UNION ON THE EVOLUTION OF ROMANIA'S CEREAL SECTOR

MIHAELA KRUZSLIČKA¹

Abstract: *The paper intends to examine the effects of the accession to the European Union on Romania's cereal sector, in the period 2007-2016, in terms of evolution of areas cultivated with wheat and maize, production in volume and value terms, consumption and self-sufficiency, exports and imports, as well as the evolution of prices. The results reveal that unlike other sectors, the accession has steadily contributed to Romania's cereal sector revigoration. Although yields in Romania are still substantially below those of the major European cereal producing countries, a steady growth trend can be noticed after 2007, due to the European funds that have allowed easier access to technological resources on the community market, and to a tendency for land consolidation, these advanced technologies being used more efficiently. The self-sufficiency degree has been reached and the trend is increasing, as it can be seen from the trade balance for cereals.*

Key words: *production, prices, productivity, cereals, consumption, trade, Romania.*

JEL Classification: *Q01, Q10, Q12, Q13.*

INTRODUCTION

In the pre-accession to EU period the main tool for the funding of the agricultural activities was SAPARD, a program which followed the competitiveness increase and re-technologization by acquisition of machines and performing equipments. The main measure by which modernizations were made in the farms- cereal producers was measure 3.1 „Investments in agricultural farms”, the sub-measure Field Crops (1,186 projects approved, representing 19% of total projects), having in view, mainly, the acquisition of machines and equipments, and the total allocated value was of 112.5 mill. euro.

After the EU accession, through the National Rural Development Program 2007-2013 the cereals' sector benefited of 411.1 mill. euro funding as result of the accessing the following measures: (a) Measure 112 „Young farmers installing”, and by sub-measure „Field Crops” there were allotted 83.7 mill. euro; (b) Measure 121 „Modernization of agricultural farms –field crops” having in view mainly the acquisition of machines and equipments in value of 382.0 mill. Euro; (c) Measure 123 „Increase of value added at agricultural and forestry products” in value of 206.7 thousand euro; (d) Measure 142 „Foundation of farmers' groups- Field”, and a value of 8.2 mill. euro.

The farmers who cropped cereals benefited, starting with the year 2007, of the following support forms as result of Common Agricultural Policy application, which are: The Single Area Payment Scheme (SAPS); the re-distributive payment; the payment for beneficial farm practices for climate and environment u; payment for the young farmers; The simplified scheme for the small farmers; the national transitional aids and the State aid for gas oil. All these support forms obtained by the farmers cropping cereals have permitted them to better manage the cash flow at farm's level and be able to purchase inputs without appealing to supply loan, but also they had the possibility to obtain Guarantee letter from APIA for banking loan.

European context

The total EU cereal production in the period 2007-2017 knew an increase of 18%, while in Romania the increase was higher by 255%, mainly due to the average yield increase by 246%. The

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yields per ha, at cereals, although increasing, are low towards the EU average, hardly in the year 2017 the cereals average yield drew closer to a value of 94.5% towards that registered in the EU 28.

After the cereal production, Romania was on the 8-th place in the EU in the year 2007, as in the year 2017 to be on the 4-th place. This thing takes place in the conditions in which the area cropped with cereals was maintained relatively constant in the interval 2007-2017.

Romania situated on the 5-th position by the area cropped with wheat and on the first place by area cropped with maize, place maintained on the whole period 2007-2017.

In Romania the average wheat yield was at the level of 50% from the European one, in the interval 2007-2009, and the increase of the average wheat yield was not in the rate registered in the EU, such that in the interval 2012-2015 the average wheat yield represents only 42% of that registered in the EU. Whereas, the average maize yield had a more stressed increase, such that in the period 2007-2009 it represented 36% of the average EU 28 as in the period 2013-2015 to represent 53% of the average value registered at the EU 28 level. (Table 1).

Table 1. Cereals – area, average yield and total production

	U.M	2007-2009			2010-2012			2013-2016		
		Average Romania	EU-28 average	Rank in EU-28	Average Romania	EU-28 average	Rank in EU-28	Average Romania	EU-28 average	Rank in EU-28
Total area under cereals	thou. ha	5208	59546	5	5236	57124	5	5456	56685	5
Area under wheat		2078	25850	4	2036	25936	5	2115	26094	5
Area under maize		2435	8765	1	2473	9156	1	2556	9301	1
Average yield cereals	kg/ha	2500	4900	26	3200	5100	24	3400	5100	22
Wheat average yield		2500	5000	25	2400	4900	24	2400	5000	24
Maize average yield		2700	7500	20*	3700	8000	22	4100	8100	21
Total cereal production	thou. tons	13171	291468	8	16793	286739	7	21005	314413	6
Total wheat production		5143	136099	8	6080	137113	7	7819	149415	5
Total maize production		6559	58675	4	8904	63487	2	9578	63583	2

*Without Denmark and Great Britain that did not report any maize yields for the period 2007 – 2009

Source: calculations based on Eurostat [apro_acs_a]

In the year 2017, the value of cereal production at the European Union level was of 46 billion euro, of which wheat represented 51% and maize 21%.

The first five producers at EU-28 level are totalling 67% of the value of wheat production and 71% of the value of maize production. These results are showing a very high degree of cereal production concentration.

Romania's cereal production value in the year 2017 was of 4.2 billion euro of which 34.2 % represent wheat, and 54% is represented by maize. By the value of cereal production Romania is situating on the 3-rd place in the EU.

With a value of the wheat production of 1.43 billion. euro, Romania situated on the 6-th place, while at maize it situated on the 1st place with 2.26 billion. euro.

The total wheat production in the year 2015 at the EU-28 level was of 152.3 mill. tones, Romania situating on the 6-th place with cu 9.8 mill. tones, the first place being occupied by France with 38.7 mill. tones.

The low average yields in the case of Romania towards the big producers countries at European level are caused, on one hand by the extreme weather conditions as: droughts, floods or frosts, but also by the lack of some efficient measures for their melioration, through the development of the irrigation systems, mainly in the zones which are most exposed to the drought's effects. Also, there must be held in view other measures which should have as effect bigger average per ha yields as: enlargement of the high yield tractors and machines' park, the optimization of the fertilizing systems and fight with pests, and also the choice for some hybrids to ensure a higher

resistance to the external environmental factors and pests. Another cause of the low average yields is the very high lands' fragmentation.

The existent situation

In Romania the area cropped with cereals in the year 2016 was of 5486.9 thousand hectares of which 39% where cropped with wheat, 47% with maize, 5% with barley, 3% with oat and 5% was represented by other cereals. The areas cropped with cereals remained somehow constant, with smaller variations after the year 2007 while the average yields are registering an increasing trend, fact reflected in the total wheat productions (fig.1). The dependence of the productions on the climate factors made that the cereal production present important variations, on the studied period.

Figure 1. Evolution of areas and cereal production in Romania



Source: tempo-online data, INS 2016 and DG AGRI 2016 data

From the point of view of the structure by size classes for the cereal farms, in Romania, we can see a constant tendency to amalgamate the land areas into medium size farms (20-99,9 ha) and big farms, of over 100 ha. Thus, the number of the medium and big size farms which are cropping wheat increased in the period 2003-2013 by 14.5 % and respectively by 56.4%, the area cropped by these ones registering increases of 37.6%, in case of the average farms and respectively 44.3% in case of the big farms.

Also, the farms specialized in the crops of maize have registered important increases in the interval 2007-2013, of 18.8% in the case of medium farms and 60.6% in the case of big ones, the area cropped by them increasing by 82.8% and respectively by 100.3% in case of big farms.

It is easy to learn that the average yields per ha are higher in case of amalgamated land areas, the farms with big areas of land, due to a centralized management, the employment of specialists, a better technical endowment than in the case of small size farms, the big farms having a more easy access to loans for investments in technological reshaping and warehouse capacities, obtaining a higher value added in the end.

On the other hand, the pre-accession to EU funds (SAPARD) and subsequently the National Rural Development Program, have facilitated the acquisition of performant agricultural machines and together with them, the know-how transfer, leading finally to land amalgamation into medium and big size farms.

The economic performance is positively correlated with the farm's economic size, such that: one farm from the smaller class than 2000 euro is producing averagely a value of 2709 euro/year per one work unit, while at a farm producing 500000 euro it produces averagely 59740 euro/year per one work unit, 22 times more than a small farm. This fact is explained by the high technologization degree in the big size farms.

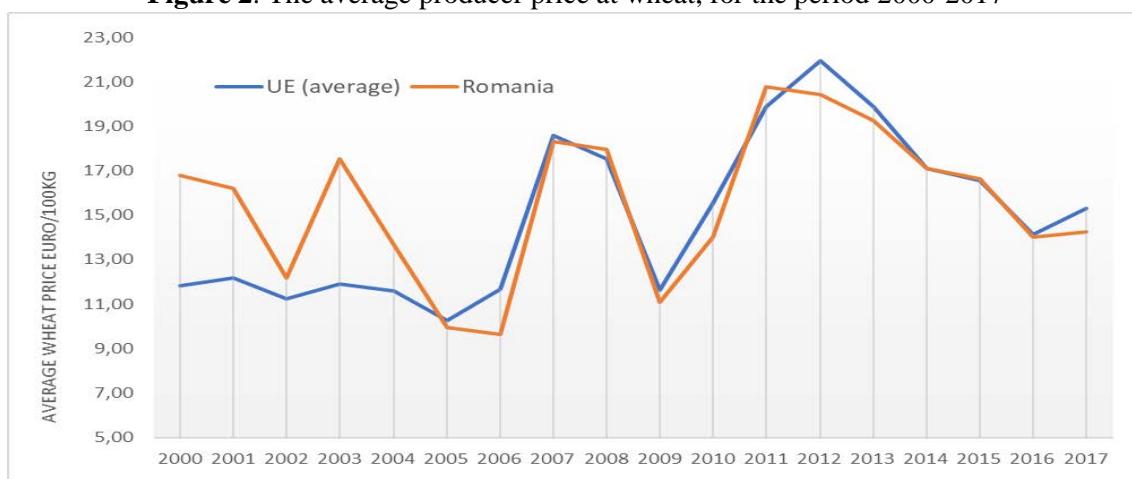
Labour productivity increased at all classes of economic size, but under different percentages. The higher increase is registered in the farms of class: 500000 euro and more (by 110%).

In the analysed period, 2005-2017, the trend for all studied indicators is of agricultural production concentration into big size farms.

Prices

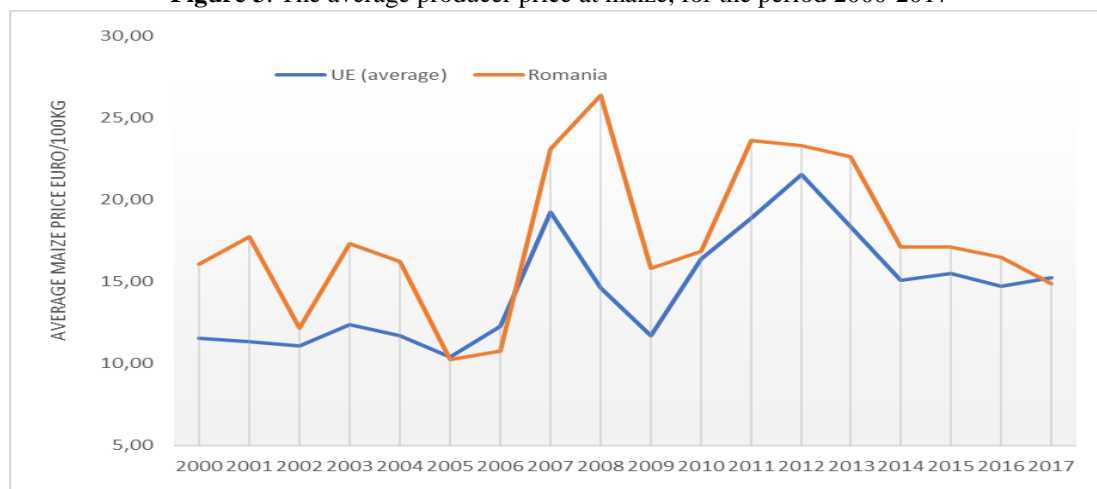
The average producer price, for wheat, in the period 2000-2017 (fig.2), varied in function of the conditions on the internal market (respectively the limited supply because of the unfavourable weather factors) and of the prices' evolution on the international market. If in the period 2000-2007 there were significant differences between the prices practiced in Romania towards those practiced in the EU, the accession to the EU, and also the cereals surplus destined to export had as result the elimination of this gaps. This thing is observed both in case of wheat and also at maize (fig.3).

Figure 2. The average producer price at wheat, for the period 2000-2017



Source: Eurostat [apri_ap_crpouta]

Figure 3. The average producer price at maize, for the period 2000-2017

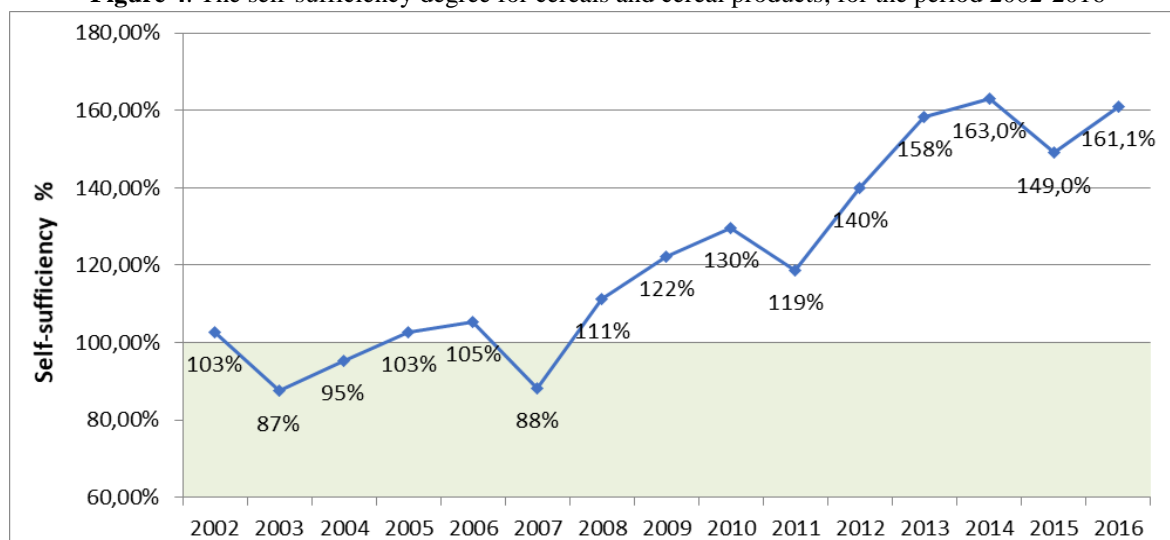


Source: Eurostat [apri_ap_crpouta]

The self-sufficiency degree

Cereals are from the group of products for which the self-sufficiency degree was reached starting with the year 2005, the only year which had a self-sufficiency degree of under 100% being the year 2007 when a severe drought was registered. The self-sufficiency degree of wheat and maize are registered a constant increasing trend, with maximum values, for wheat, in the year 2016 of 225% and for maize in the year 2015, of 144%. For the total group of cereals, the same trend is maintained, with a maximum of 163% in the year 2014 (fig. 4).

Figure 4. The self-sufficiency degree for cereals and cereal products, for the period 2002-2016



Source: calculations and processing after data in the Food Balances 2002-2016, NSI Bucharest

At total cereals, the internal availabilities for consumption are presenting a decreasing trend in the interval 2000-2016. Once self-sufficiency being reached, on the background of a relatively linear trend of cereals import and of a significant increase at cereal exports, mainly in the interval 2007-2016, the internal consumption availabilities are decreasing.

The human cereal consumption is relatively constant, situating itself at an average of 158 kg/capita /year, the available for human consumption registering small variations in the interval 2000-2016, the average being of 4416 thousand tones.

Also, small variations are met also at the cereals for seeds, these ones being correlated with the areas on which this type of crop was cropped, which having small variation coefficients are generating a relatively constant consumption .

An increasing trend is to be seen at the quantities of cereals destined to industrial processing, in the year 2016 being utilized 731 thousand tones increasing by 133% opposed to the year 2000.

The important variations of the available for consumption, caused mainly by the environmental are taken over by the fodder consumption. An important share in the cereals for fodders consumption is held by maize, which represents 84.4% of the total cereals for fodders consumption, while wheat has a share of only 9.1%.

The average net annual consumption of wheat per inhabitant capita decreased since the year 2000 by 14%, to 122 kg/capita /year in 2016.

The maize consumption per inhabitant capita presented a slight increase trend in the studied interval with a value of 30 kg/capita /year in 2016.

Cereals import and export

In the period 2000–2007 the trade balance in the trade with cereals registered fluctuations, with deficits (in the years 2003: -289,6 mill. euro; in the year 2004: -177.7 mill.euro and in the year 2007: -118,8 mill. euro), products of internal supply contraction caused by the un-favourable

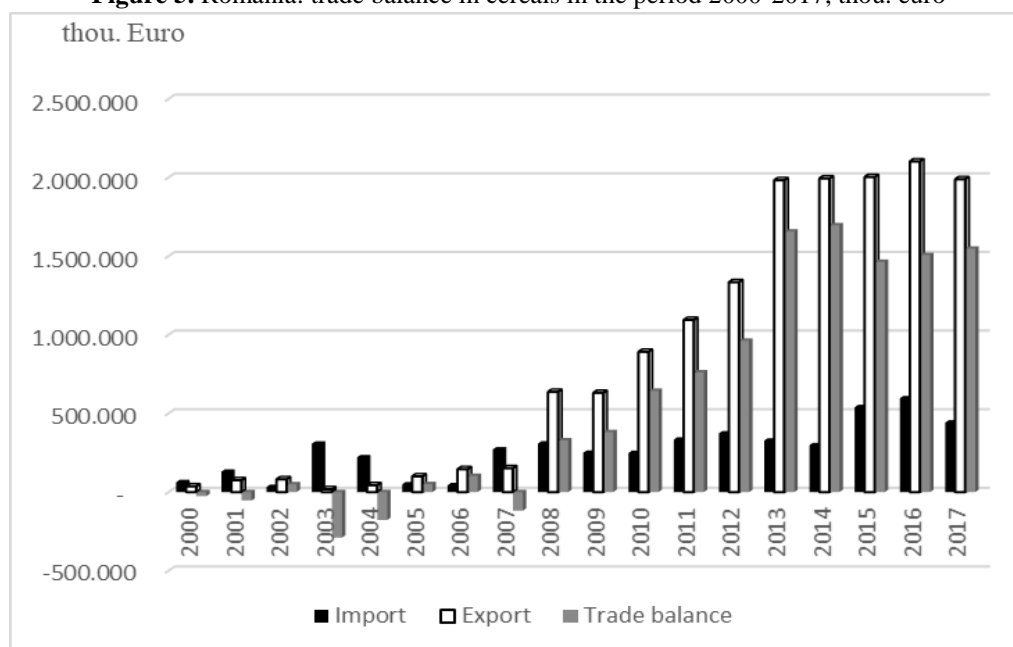
weather conditions, but also with surpluses, the biggest being registered in the year 2006, in value of 84.2 mill. euro.

Starting with the year 2008 the trade balance account is positive, for the period studied, it is observed a passing from a deficit of 118.8 mill. euro to a surplus increasing on whole studied period. In the year 2014, the surplus registered is of 1.7 billion. euro.

Together with the intra-community market liberalization, the trade exchanges intensified and their structure was modified. Thus, if in the period 2000–2007 the intra-community imports did not exceed 60%, after the year 2008 these were situating around the value of 93%. Also, the exports to the European Union diminished starting with the year 2007, reaching from 62% in the year 2007 to 38.6% in 2017, the main selling markets for cereals being the extra-community ones, respectively North Africa and Near and Middle East. Romania has a competitive advantage regarding the export on these markets due to the small transport costs .

The trade balances for wheat and maize are positive, with an obvious increasing trend in the interval 2008–2015, the total surplus at cereals in the year 2016 being of 1.5 billion. Euro, and in 2017 this was of 1.547 billion. Euro (fig.5) .

Figure 5. Romania: trade balance in cereals in the period 2000-2017, thou. euro



Source: Eurostat, COMEXT database, Code 10: Cereals.

The wheat imports on the intra-community market are registering an average annual percentage of 94 % in the interval 2008–2015 with maximums of 97% in the years 2008, 2009 and 2014. In general, from the intra-community space we import wheat destined to sowing. The structure of exports in wheat was also modified, such that the ratio of extra-community exports and intra-community ones reversed itself. If in the 2000–2007 the exports to EU were of 64%, on the interval 2008–2015, this reached to 36%. In value terms the trade exchanges registered a substantial increase in the interval 2008–2015 with an average annual value of 550.3 mill. euro, with peaks in the years 2013 of 976.9 mill .euro and 2014 of 959,3 mill. euro opposed to the interval 2000–2007 when the annual average was of 33.04 mill. euro.

CONCLUSIONS

In Romania, the most vast crop is that of cereals; the average of the last 25 years is showing that over 65% of the total arable area is cropped with cereals.

Although the average yields are still substantially under those of the European countries-big cereals producers-, after the year 2007 we can observe a trend of constant increase of them due

to the easier access to technological resources on the community market, but also due to a tendency for land amalgamation, these advanced technologies being more efficiently utilized.

The trend in the case of small farms is decreasing, the number of medium and big farms obviously increasing. Even in such conditions the inland cereal production is relatively, strongly influenced by the climate factors, mainly drought, which leads to the conclusion that we must find new efficient modalities to stimulate irrigation of some bigger land areas taking advantage of the increase of big farms' number. Labour productivity, on the economic size of the farm, but under different percentages is increasing more in the case of big farms due to a coherent management of crops and technologies utilized in cereals cropping, of the high economic capacity, used in the renewal of the technological park and the use of high quality genetic material, but also the possibility to easier access to European Funds for the activity's development.

By accessing the projects within RDNP it was wished both the attraction of young farmers in the rural space, and the modernization of agricultural farms together with the foundation of the farmers' groups. Also, of these projects there benefited the economic agents, who followed the increase of the value added of agricultural and forestry products, but also the subsistence farms.

The cereals' foreign trade knew a reshape in the period 2007-2017 opposed to the previous period, the trade exchanges intensifying themselves, the trade balance in the trade with cereals being positive and registering an increasing trend starting with the year 2008. Thus, if cereals' import are mainly made from the community market, the exports are done mainly towards countries outside the community space.

Starting with the year 2005 the self-sufficiency degree is of 100% and registers a constant increasing trend. Thus, the higher dynamics of the cereal production and the trend for constant decrease of cereal consumption led to a self-sufficiency degree of over 100% starting with the year 2008.

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